Design And Development Of An Embedded Controller For Roboticmanipulator

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Summary

An embedded controller is designed to generate the control law for robotic manipulators. Since the manipulator speed is limited by the mechanical constraints of the robot arm, the system's throughout should be optimized for generation of the required control law based on the data received from the robot's position sensors. Mohseni's Proposed Algorithm, MPA, has been incorporated into the embedded controller to reduce the computational efforts and to obtain a close-to-optimal control law. MPA is capable of determining a simplified control law by selecting the most dominant terms from a library of nonlinear functions associated with the robot's equations of motion. The embedded controller is microprocessor based, which provides the designer with the advantage of using a highly-integrated processor and the ability to develop the software needed